

REMARKS

Claims 13-24 are pending in the application. By this Amendment, claims 13, 14, 16 – 21, 23 and 24 have been amended. Claims 15 and 22 remain unchanged.

Reconsideration in view of the above amendments and the following remarks is respectfully requested.

Objection to the Specification

The office action includes objections to the disclosure as missing description headings in the specification. Applicants have amended the specification herein to add section headings.

Rejections under 35 U.S.C. §112

Claims 13-24 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicants have amended the claims in a manner thought to resolve any issues with the claims.

The Claimed Invention

The present invention discloses a method for operating a dishwasher that includes a wash program having partial program steps pre-wash (1), clean (2), intermediate rinse (3), clear rinse (4) and dry (5). In the method of the present invention, the pressure at which the washing liquid is conveyed from the circulating pump to the at least one spray

device is varied in order to remove food residues in small quantities in accordance with a predetermined hydraulic abrasion capacity. This variation of pressure can be done by varying at least one of spray pressure and spray quantity. By varying the pressure or quantity at a predetermined hydraulic abrasion capacity, food residues can be carried away from the dishwasher in a manner such that the dishwasher filter remains functional (i.e., does not clog) during the wash program.

This is an advantage over related art dishwashing methods where water jets act on the items to be washed using spray that is relatively strong and not varied, and thus food residues are released relatively rapidly during the pre-wash phase. Accordingly, there is a risk in the related art methods that the filter systems provided in the dishwasher become clogged with washing residues, which impedes the water circulation in the dishwasher. This impediment may also result in back-contamination of the items to be washed as a result of size reduction and fine distribution of the washing residues deposited at the filter systems, thereby reducing the cleaning effect of the dishwasher.

The Rejections under 35 U.S.C. § 103(a)

Claims 13-15, 18-19, and 22-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wyman (GB-2221384) in view of Eiermann et al. (U.S. Patent Publication No. 2002/0108639). Applicants respectfully traverse this rejection.

Independent claim 13 recites a feature whereby the method comprises “varying a pressure at which the washing liquid is conveyed from the circulating pump to the at least one spray device in order to remove food residues in small quantities by a pre-determined

hydraulic abrasion capacity . . . thus ensuring that a filter remains functional in a remainder of the wash program.” The grounds of rejection allege that this feature is disclosed by Wyman. In particular, the grounds of rejection cite page 4, line 2 to page 5, line 34 of Wyman as disclosing a method of controlling the sequence of operation of all the elements of the dishwasher and means for periodically varying the strength of the jets. The grounds of rejection acknowledge that Wyman fails to disclose the claimed feature, more specifically recited in claim 15, of an intermediate rinse cycle, where the circulating pump is operated at about 30% to 60% of maximum capacity, in a second part section of the pre-wash process it is operated at about 50% to 100% of maximum capacity and in a third part section of the prewash process it is operated at about 30% to 60% of maximum capacity.

Applicants respectfully submit that the variation of the pump 15 in the Wyman dishwasher is varied for the purpose of controlling the level of acoustic noise during a wash process (see Wyman at page 1, line 15 – page 2, line 8) and not for the purpose of preventing the clogging of a filter. As such, in the Wyman dishwasher, the pump 15 starts at its lower speed of 2,000 rpm or 2,100 rpm, causing jets of cold water to soak into the layers of food waste on the surfaces of the articles stacked within the dishwasher in order to soften them. The water is recirculated as it collects in the sump 22, and this process continues for at least 4 minutes. The Wyman dishwasher timer 21 then causes the pump motor 151 to be switched to the higher voltage level, to rotate at the higher speed of 2,700 rpm for a substantially shorter period, for example, 2 minutes (see Wyman at page 4, lines 15-26).

As such, Wyman teaches away from the current invention in that the two-stage process of a very low-pressure to soak the dishes followed by high pressure to rinse the dishes would still cause the food particles (residues) to clog the filter as prevented by the predetermined hydraulic abrasion capacity feature of the present invention. Accordingly, Applicants respectfully submit that Wyamn does not disclose or suggest a predetermined hydraulic abrasion capacity nor does it ensure that its filter remains functional in a remainder of the wash program as recited in independent claim 13.

Applicants note that Eiermann et al. is cited in the grounds of rejection as disclosing a method and apparatus for operating a dishwasher having a conventional complete dishwashing program that runs in partial steps. It too fails to disclose the predetermined hydraulic abrasion capacity feature of the present invention. While the grounds of rejection allege that it would have been obvious at the time Applicants invented the claimed process to incorporate the intermediate rinse cycle as disclosed by Eiermann et al. into the process and apparatus of Wyman for the purpose of increasing the rinsing effect for removal of the detergent solution from the objects, Applicants respectfully submit that this would not disclose or suggest using a predetermined hydraulic abrasion capacity feature as in the present invention to ensure a filter remains functional in a remainder of the wash program. Indeed, as discussed above, the Wyman method with its pre-soak and then higher pressure rinse would lead to clogging of the filter as in the related art. Accordingly, Applicants submit that independent claim 13 is allowable (as well as independent claim 24 including similar features), along with dependent claims 14-23 that depend from claim 13.

Further, Wyman does not suggest how the rpm's therein relate to operating the pump in specific speeds with respect to the capacity of the pump at about 30% to 60% of maximum capacity, 50% to 100% of maximum capacity and at about 30% to 60% of maximum capacity. A maximum capacity of the pump in Wyman is not disclosed; only that it is operated at lower rpm's to reduce the noise level during a wash. This allowable feature is disclosed in dependent claims 15 and 19.

Claim 16 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Wyman in view of Eiermann et al., and further in view of Edwards et al. (U.S. Patent No. 5,849,101). Claim 17 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Wyman in view of Eiermann et al., and further in view of DE-2441361. Claim 20 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Wyman in view of Eiermann et al., and further in view of Sakata (U.S. Patent No. 5,355,900). Claim 21 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Wyman in view of Eiermann et al., and further in view of Edwards et al. and Sakata. Claims 16, 17, 20, and 21 are allowable at least based on their dependence on claim 13.

CONCLUSION

In view of the above, allowance of claims 13-24 are respectfully requested. If the Examiner has any questions regarding the remarks herein, the Examiner is kindly requested to contact the undersigned. If an extension of time for this paper is required, petition for extension is herewith made.

Respectfully submitted,

/Andre Pallapies/

Andre Pallapies

Registration No. 62,246

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BSH Home Appliances Corporation
100 Bosch Blvd.
New Bern, NC 28562
Phone: 252-672-7927
Fax: 714-845-2807
andre.pallapies@bshg.com